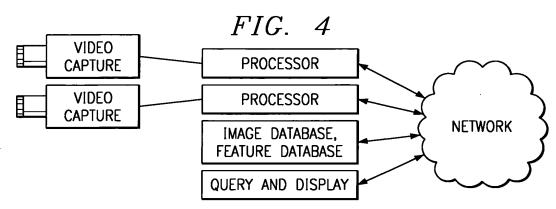




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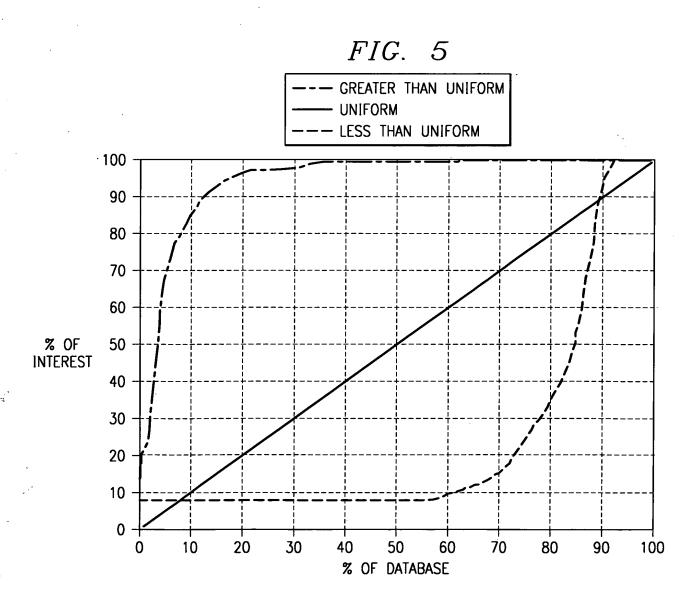






FIG. 6

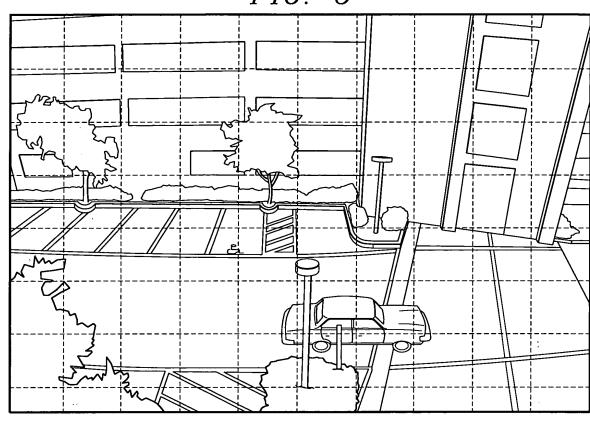
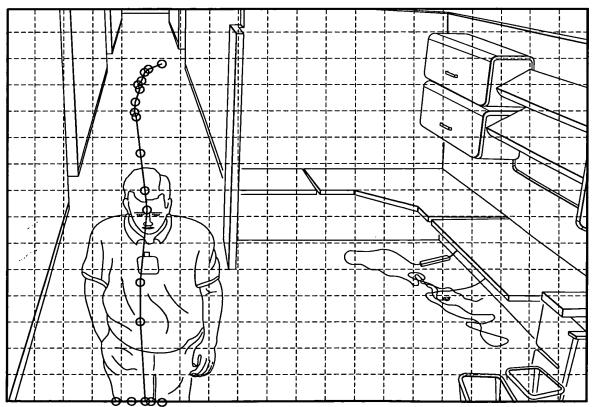


FIG. 7

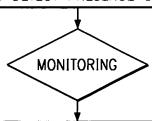




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## FIG. 8

RUN VISION SYSTEM TO CAPTURE VIDEO SEQUENCES.
PROCESS VIDEO TO DETECT PRESENCE OF MOVING OBJECTS



WHEN AN OBJECT ENTERS THE FIELD OF VIEW OR WHEN THERE ARE SEVERAL OBJECTS WITHIN THE FIELD, PROCESS EACH FRAME TO EXTRACT ALL FEATURES

FOR EACH FRAME AND EACH OBJECT WITHIN THE IMAGE, CALCULATE THE FEATURES AND COLOR HISTOGRAM

UPON THE OBJECT'S EXIT FILTER AND PROCESS
THE FEATURE DATA TO ELIMINATE NOISE. APPLY
MEDIAN AND AVERAGE FILTERING TO ELIMINATE
OUTLIERS AND HIGH FREQUENCY VARIATIONS

FOR EACH OBJECT WITHIN THE FIELD CREATE FEATURE VECTORS USING THE MXN GRID SYSTEM

CREATE SEQUENCE OF GRID BLOCKS TRAVERSED BY EACH OBJECT. USING THE VECTOR OF (x,y) IMAGE COORDINATES, DETERMINE WHICH GRID BLOCK THE OBJECT OCCUPIED AT EACH FRAME CAPTURE

CREATE FEATURE VECTORS CORRESPONDING TO THE BLOCKS TRAVERSED BY EACH OBJECT

FOR EACH BLOCK TRAVERSED BY THE OBJECT, AVERAGE ALL FEATURE VALUES SAMPLED WHILE THE OBJECT WAS LOCATED ON THAT GRID BLOCK

SAVE THE FEATURE DATA IN MEMORY







## FIG. 9

USER SPECIFIES WHICH IMAGE THEY WISH TO SEE MORE OCCURRENCES OF

READ FEATURE FILES CORRESPONDING TO THE QUERY IMAGE

OPEN DATABASE. READ FEATURE FILES FOR OBJECT, J, IN THE DATABASE

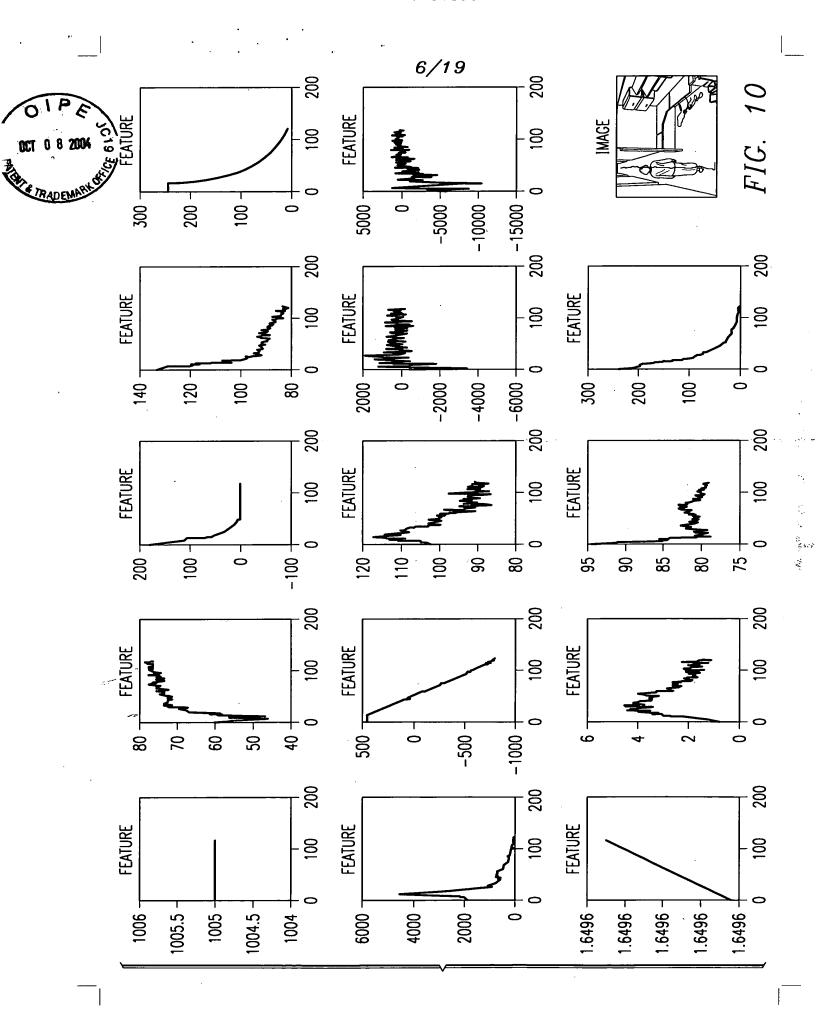
CALCUALTE SIMILARITY BETWEEN
THE QUERY OBJECT AND OBJECT J.
COMPUTE SIMILARITY METRIC FOR
EACH INDIVIDUAL FEATURE

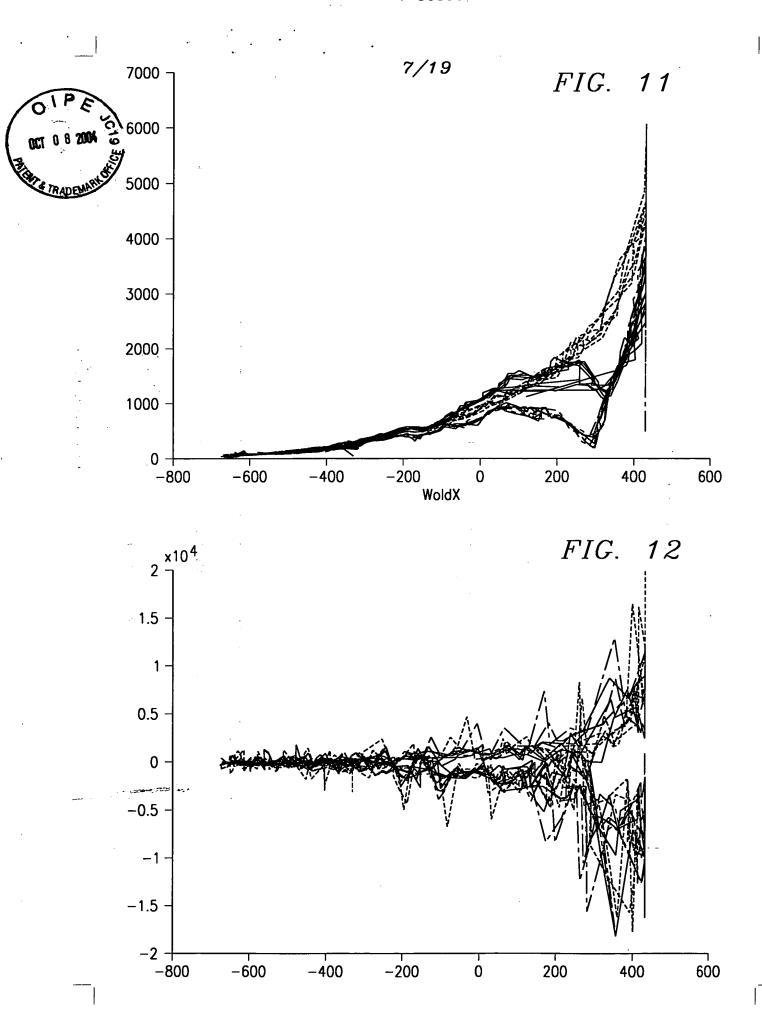
NORMALIZE EACH INDIVIDUAL SIMILARITY SCORE AND SUM THE NORMALIZED DIFFERENCES

RANK THE SIMILARITY OF THE CURRENT OBJECT WITH THE GIVEN OBJECT. CONSTRUCT A RANKED LIST OF FILE NAMES USING A SORTING ALGORITHM

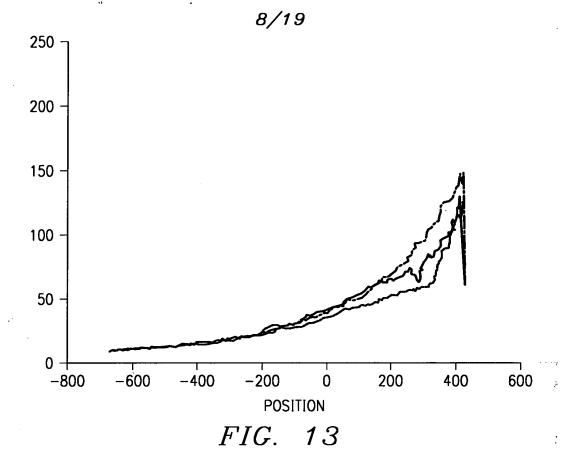
DISPLAY SNAPSHOTS IN THE USER IN RANKED ORDER

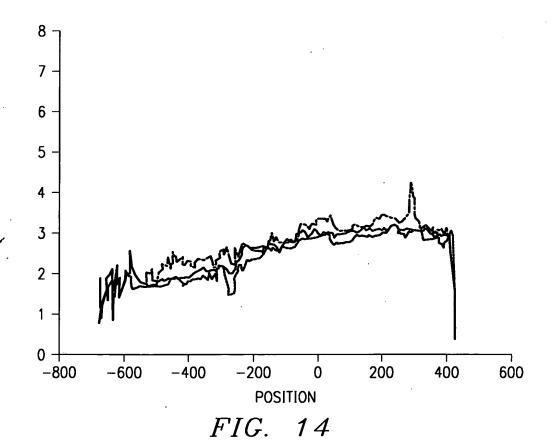
LOOP UNTIL
SCORES HAVE
BEEN CALCULATED FOR
EACH OBJECT IN
THE DATABASE

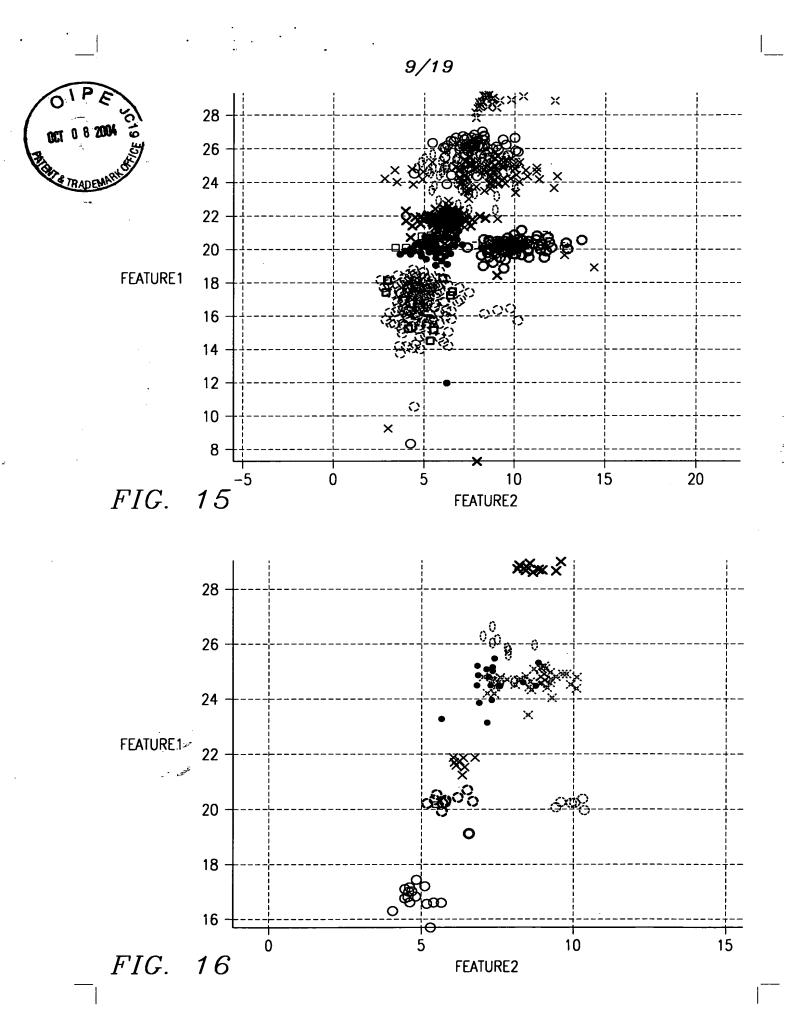


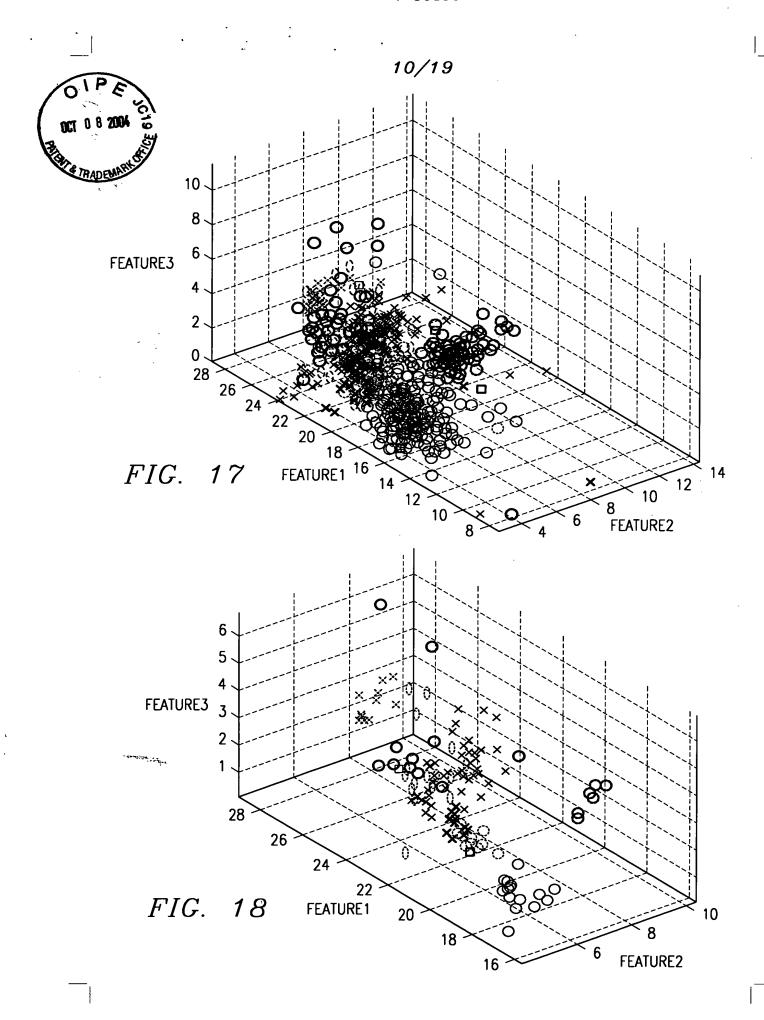


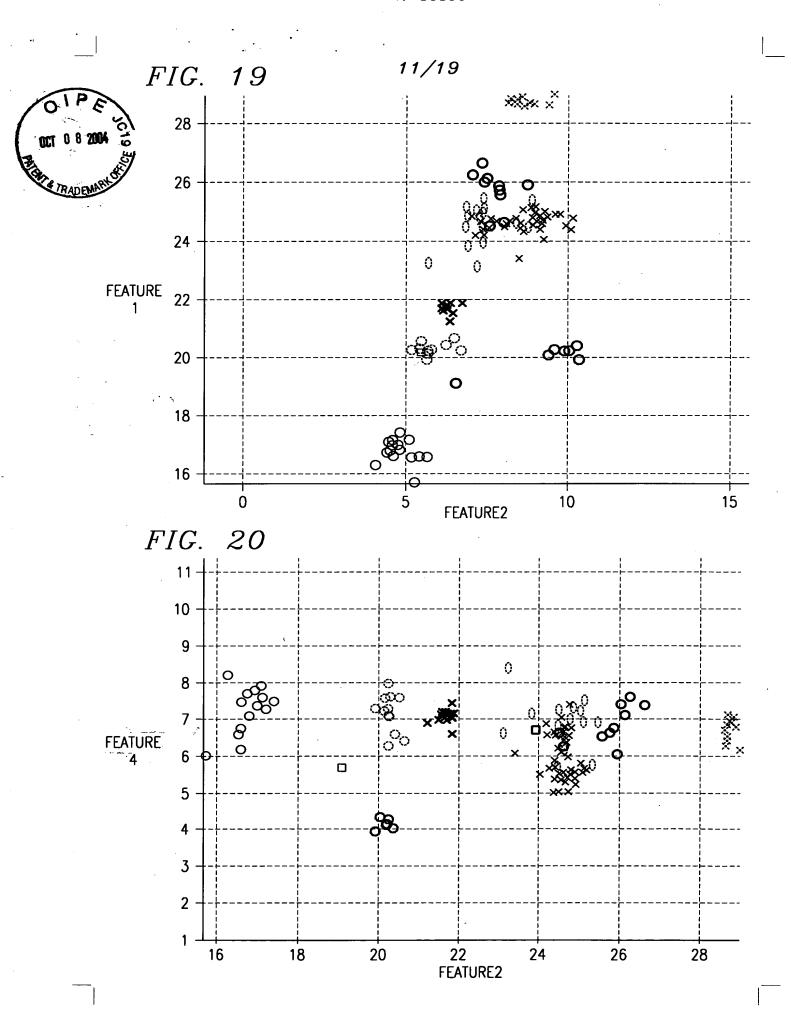


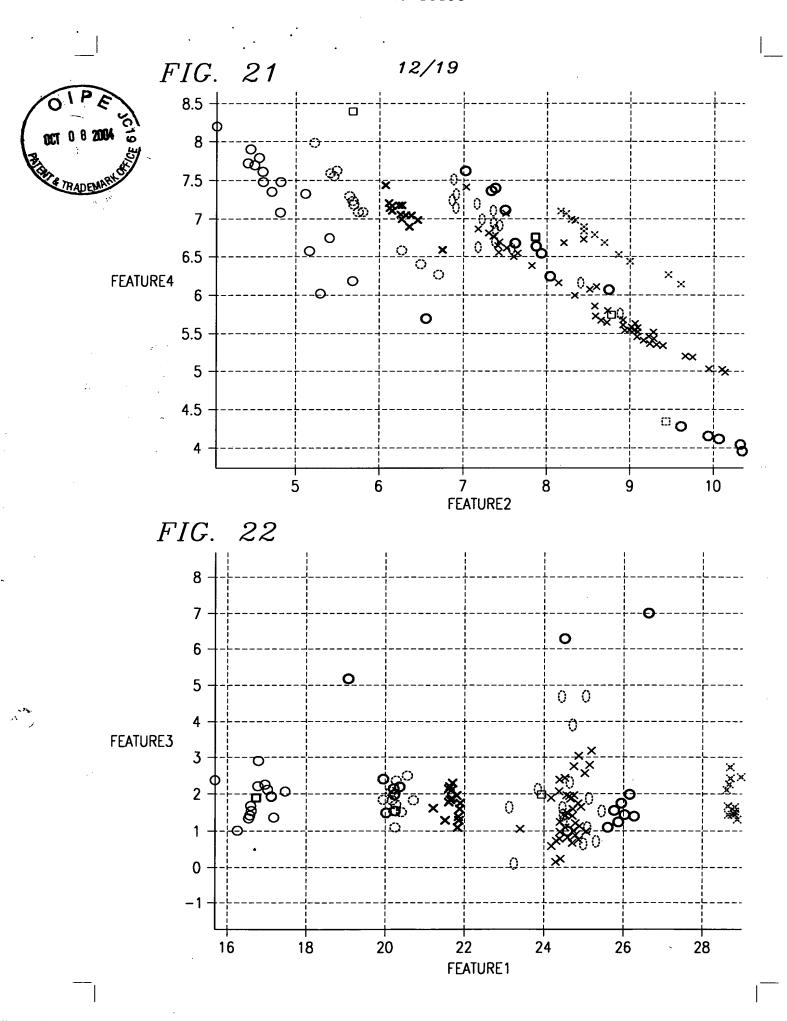


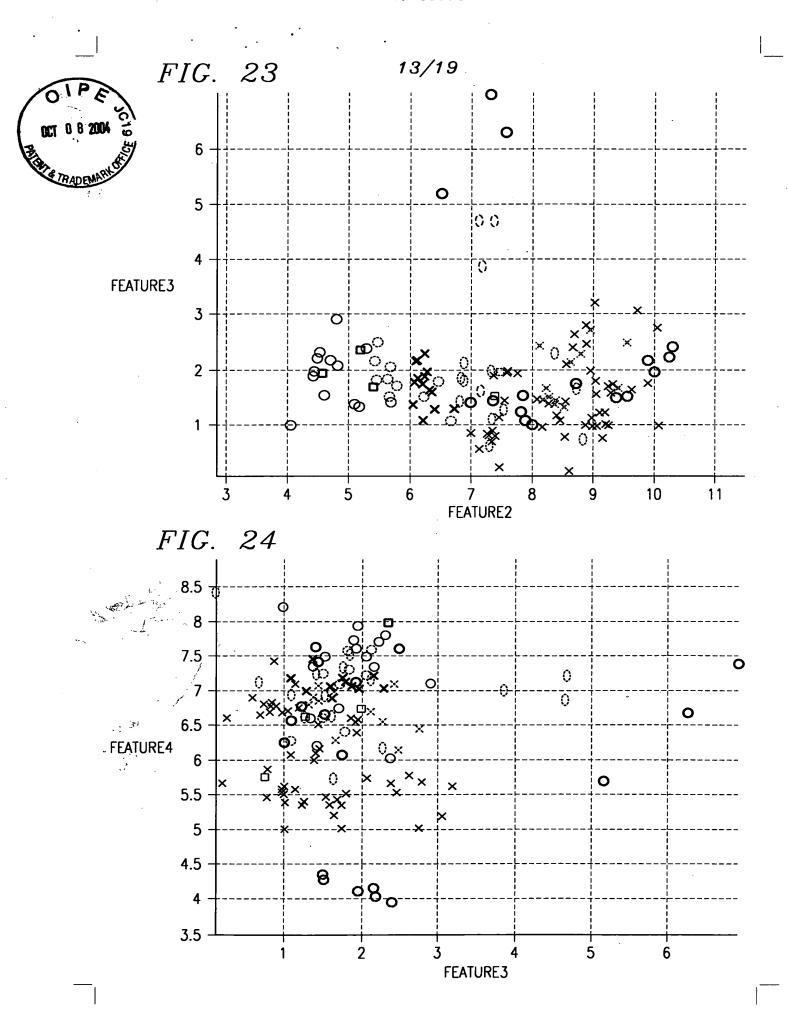


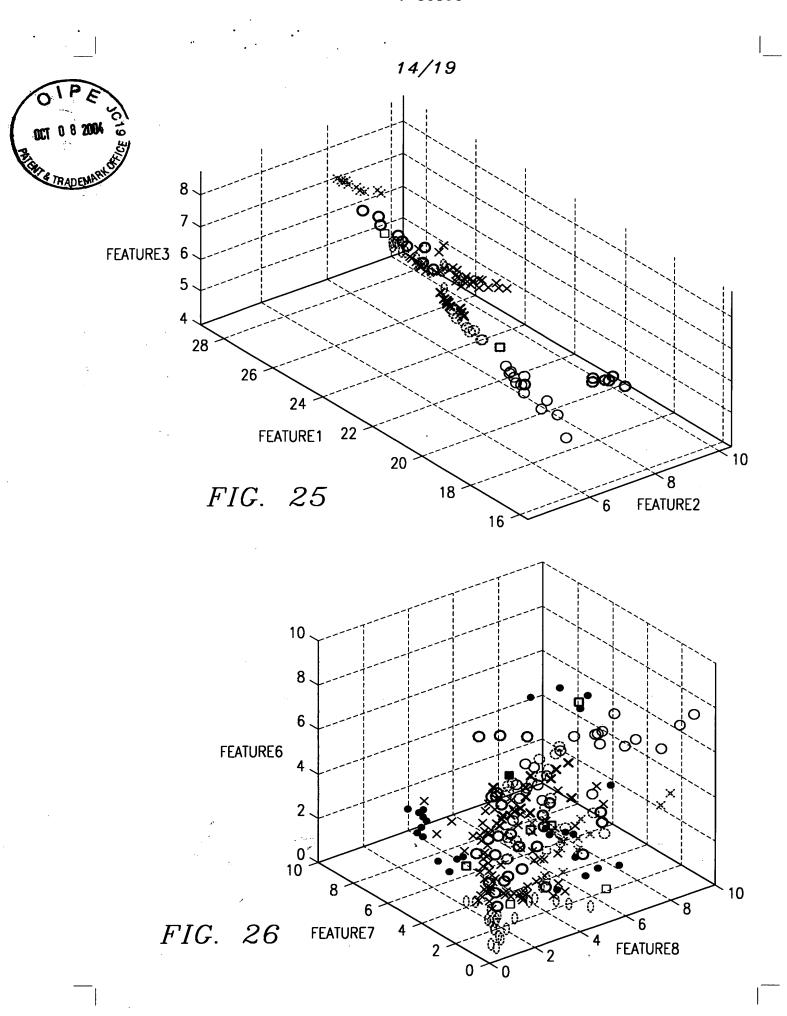


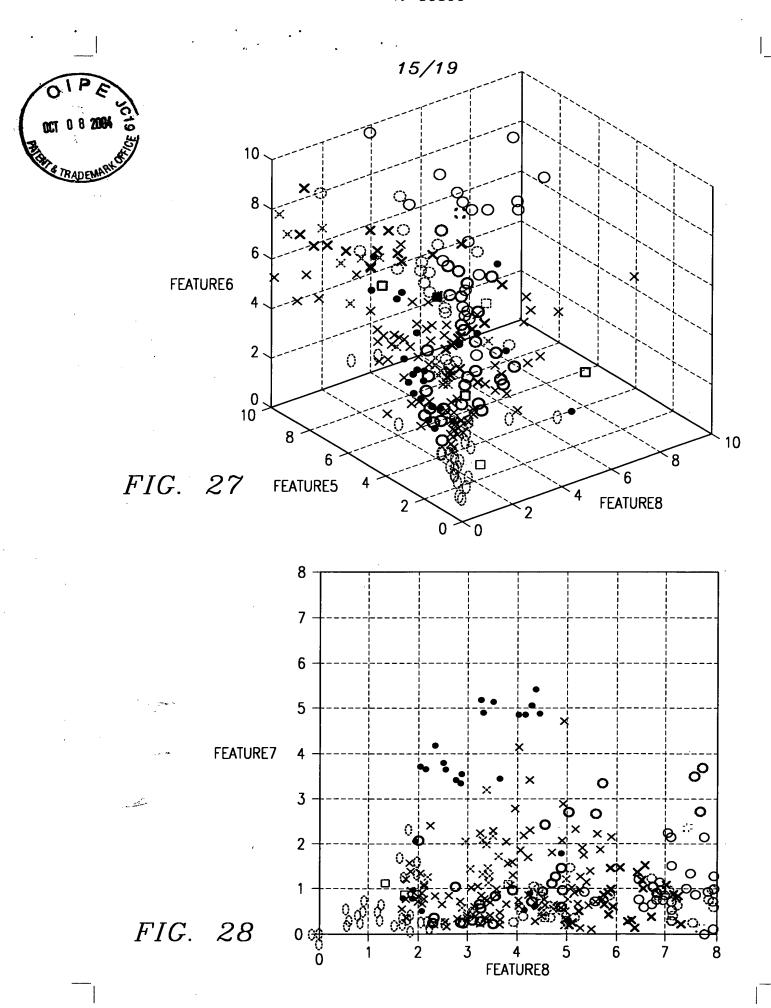




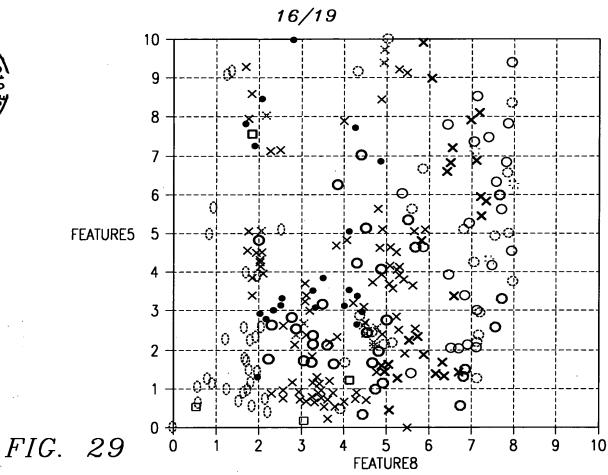


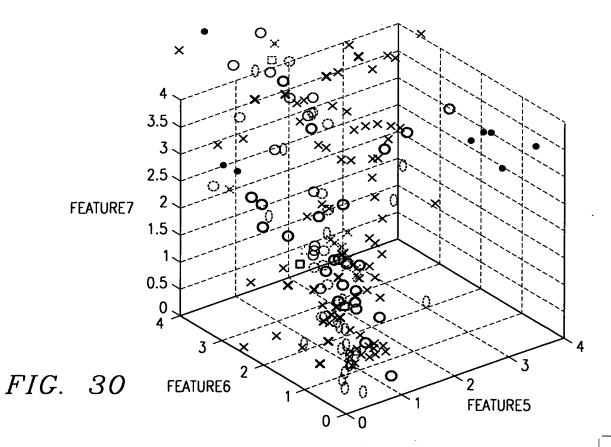


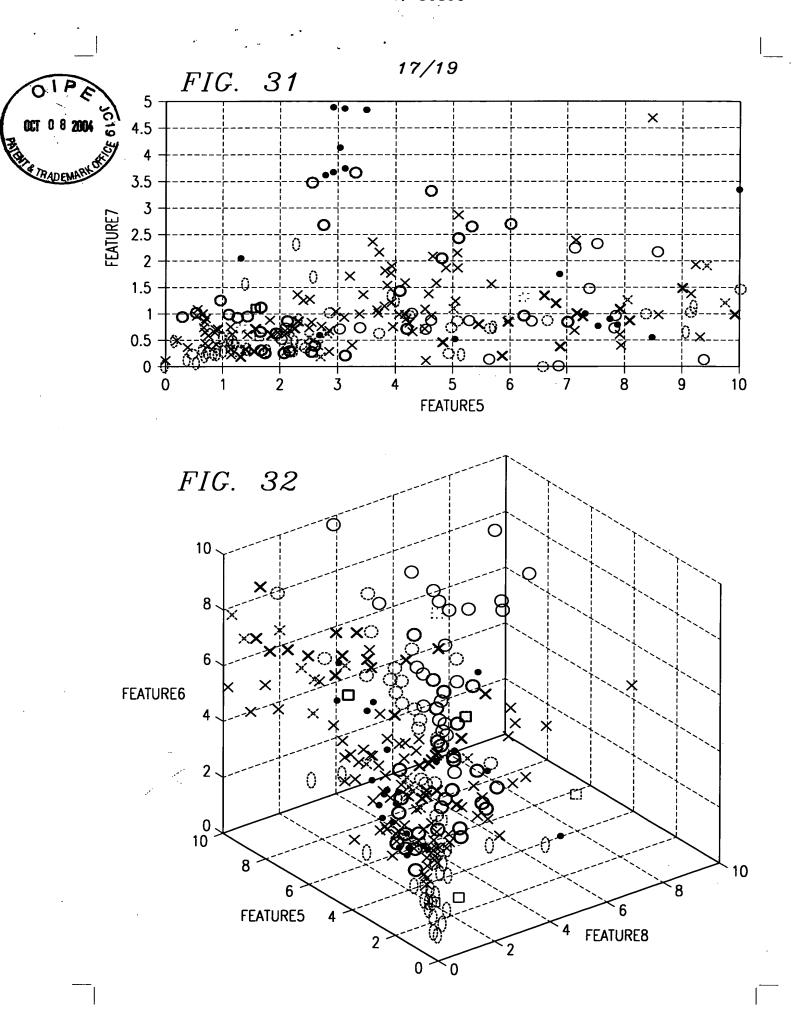


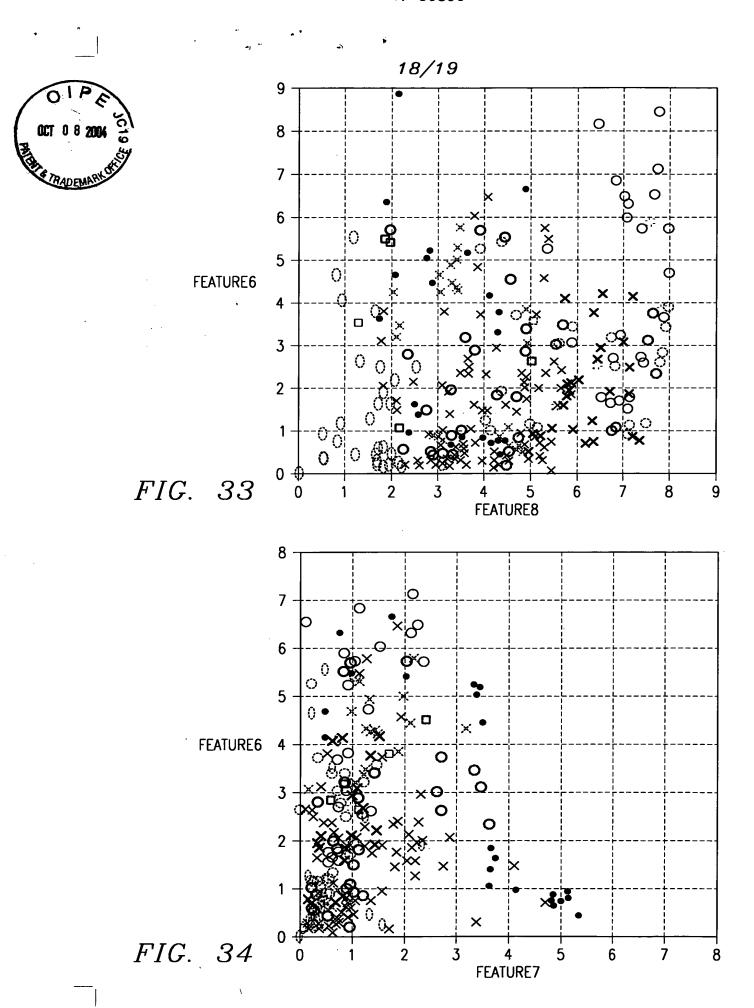












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